

# Optical Isolators

E-TEK Dynamics has built a worldwide reputation for the high quality and technical excellence of its optical isolators. The superb range of optical isolators offers the best performance commercially available, and the broad range of standard devices gives customers a wide selection for all applications.

## All isolators feature:

- Low insertion loss
- High isolation and return loss
- Minimum polarization sensitivity (PDL & PMD)
- Excellent stability and reliability
- Epoxy free optical paths
- Wide temperature range from -40°C to 85°C
- Miniature size

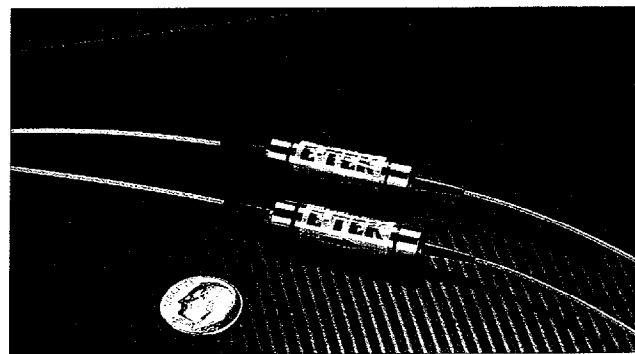
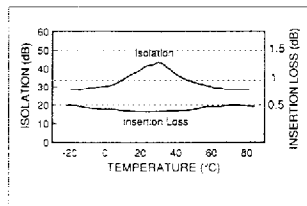
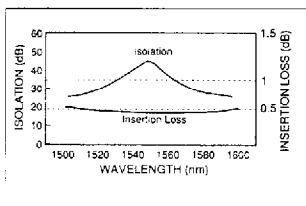
## Polarization Insensitive Fiber Isolators (PIFI)

### Classic Isolators

The "**Classic PIFI**" is a single stage isolator available in three versions - Premium, A Grade and B Grade. These units feature **extremely low insertion loss and high isolation characteristics** with minimum polarization sensitivity. They are ideal for use in optical amplifiers, high speed communications and many other applications.

### Specifications

Parameter \ Type	Premium	A Grade	B Grade
Peak Isolation (dB)	> 40	> 40	> 35
Typical Insertion Loss (dB)	0.35	0.5	0.8
Return Loss (input/output) (dB)	≥ 65/60	≥ 60/50	≥ 50/45
Polarization Dependent Loss (PDL) (dB)	< 0.05	< 0.1	< 0.2
Spectral Width (nm)	40	40	40

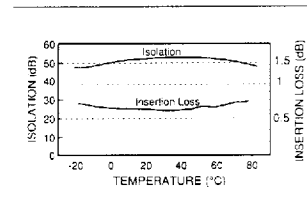
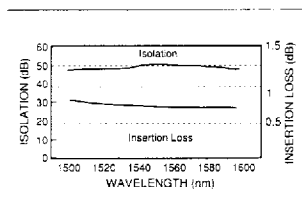


## Super Isolators

The "**Super PIFI**" is a dual stage isolator featuring **flat isolation characteristics** over a wide temperature range and a broad spectral bandwidth. A minimum PMD (<0.05ps) and PDL make Super Isolators ideal for laser and optical transmitter testing, optical amplifiers or general use in the laboratory.

### Specifications

Parameter \ Type	Premium	A Grade	B Grade
Peak Isolation (dB)	> 52	> 50	> 47
Typical Insertion Loss (dB)	0.5	0.7	0.9
Return Loss (input/output) (dB)	≥ 65/60	≥ 65/50	≥ 60/50
Polarization Dependent Loss (PDL) (dB)	< 0.1	< 0.2	< 0.3
Spectral Width (nm)	60	60	60

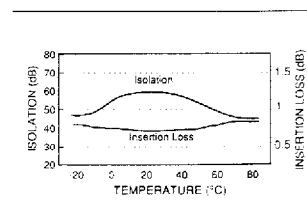
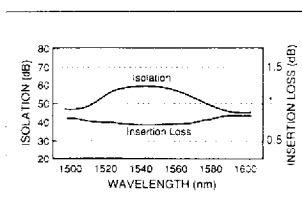


## Ultra Isolators

The "**Ultra PIFI**" is a dual stage isolator with **maximum isolation** over the wide bandwidth. It offers excellent PMD, PDL and return loss. These are rugged and environmentally stable units offering excellent stability and reliability.

### Specifications

Parameter \ Type	A Grade	B Grade
Peak Isolation (dB)	> 60	> 55
Typical Insertion Loss (dB)	0.7	0.9
Return Loss (input/output) (dB)	≥ 65/50	≥ 65/50
Polarization Dependent Loss (PDL) (dB)	< 0.2	< 0.3
Spectral Width (nm)	60	60



# Laser Interfaced Fiber Isolators (LIFI)

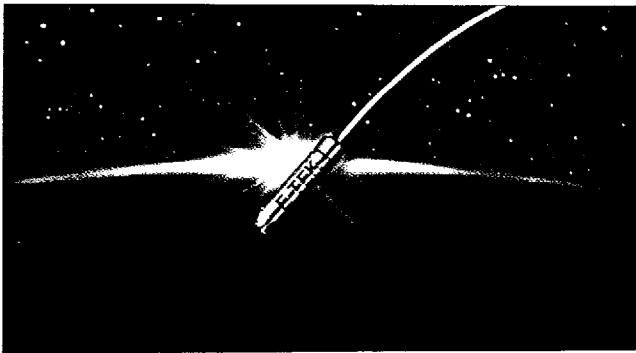
The World's smallest Laser Interfaced Fiber Isolator (LIFI) offers very high coupling efficiency to 55% and excellent isolation of 35 dB (single stage) or 55 dB (two stage). These units are extremely easy to align and are ideal for Laser Diode pigtailing and laboratory applications.

### Features include:

- High coupling efficiency
- Low back reflection
- Broad bandwidth
- Subminiature size
- Built in Miniature Optic Freespace Isolator (MOFI)
- Long working distance between LD/LIFI
- High reliability
- Ease of use

### Options include:

- Customer specified fiber type
- Choice of working distance
- Metal bonded package
- Compact version
- Single or two stage



### Specifications

Parameter	Type	Single Stage	Two Stage
Peak Isolation (dB)		> 40	> 55
Typical Coupling Efficiency(%)		45 to 55	40 to 50
Built-in Isolator Insertion Loss (dB)		0.2	0.2
Working Distance (LD to 1st lens) (mm)		0.3, 0.9, 2.0	
Operating Temperature (°C)		-20 to +70	

### PACKAGE DIMENSIONS



6(Ø) x 3.5(A) x 23.5(L)---Working distance=0.9  
6(Ø) x 4.7(A) x 23.5(L)---Working distance=2.0  
Compact:4(Ø)x 3.0(A) x 18(L)-----Working distance=0.3  
Unit=mm

### TYPICAL APPLICATIONS



# Miniature Optic Freespace Isolators (MOFI)

These miniature marvels, Miniature Optical Freespace Isolators (MOFI), offer excellent optic performance and advanced packaging design.

### Features include:

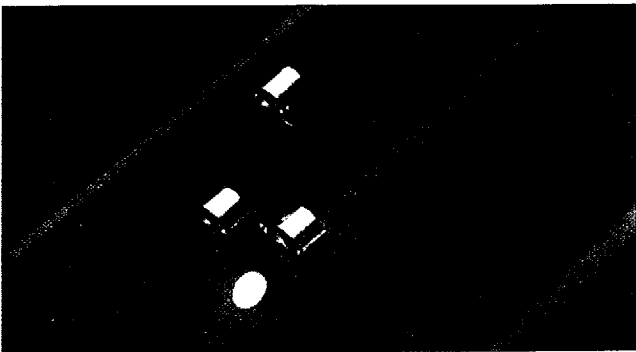
- Epoxy free, metal bonded packages
- Wide temperature range
- Miniature size and light weight
- Custom configuration available
- Low insertion loss and high isolation
- Wide angular alignment tolerance
- Low back reflection

### PACKAGE DIMENSIONS



3.0mm (Dia.) x 2.5mm (Long)  
4.0mm (Dia.) x 2.8mm (Long)

3.0mm (Dia.) x 5.0mm (Long)  
4.0mm (Dia.) x 5.0mm (Long)



### Specifications

Parameter	Type	Single Stage	Two Stage
Peak Isolation (dB)		> 40	> 65
Spectral Width (nm)		> 40	> 60
Insertion Loss (dB)		0.15	0.3
Aperture Size (mm)		1.4 (OD 4), 0.9 (OD 3)	
Operating Temperature (°C)		-20 to +70	

## New products about to be released:

- 3 or 4 port optical circulators
- Tunable optical fiber filters
- WDM isolator module
- Invisible fiber isolator
- High temperature isolator

## Other products

- Single polarization fiber isolator (SPFI)
- Fiber faraday rotator mirror (HSFM)
- Bare fiber adapters (BFA-FC, SC)
- Collimating beam interfaced fiber isolator (CIFI)